FACT SHEET BRUCELLOSIS

Veterinary

What is brucellosis?
Brucellosis is a disease that affects a wide range of animals. Cattle, sheep, goats, dogs, pigs, horses and humans are susceptible to the bacteria. There are six species of *Brucella,* each infecting a different animal.

How is the *Brucella* organism spread?
The bacteria are found in high numbers in reproductive tissue, infected calves, placentas, blood or amniotic fluid of infected females. The organism can be spread by direct contact to non-intact skin, ingestion through milk, or inhalation of this material. The bacteria then localize in the reticuloendothelial system and in the chorioendothelial layer of the placenta in cattle.

What are the clinical signs of infection?
The disease manifests in a variety of ways, depending on the sex and species of animals and the species of *Brucella*. *Brucella abortus* produces abortion and metritis in cows and an epididymo-orchitis in bulls. *Brucella ovis* in sheep primarily affects the male reproductive tract. Horses infected with *Brucella suis* present with a chronic suppurative reaction in the neck called fistulous withers. *Brucella* in dogs and pigs localize to the vertebra and produce an osteomyelitis and/or diskospondylitis.

How is brucellosis diagnosed?
Worldwide, serology screening tests are performed on milk using agglutination techniques like the milk-ring assay. Tests on blood, including immunofluorescence and ELISA, can be used as well as culture of infected placental or fetal tissues. Positive laboratory results should be reported to the state veterinarian.

Can *Brucella* infections be treated or prevented?
As part of national efforts to eliminate brucellosis from herds, positive animals are removed from the food chain to break the cycle of infection. Bulk tank milk is screened with the milk-ring test to identify and eliminate reactor herds. All dairy cows are inoculated with a live attenuated vaccine, RB51, at approximately 2 months of age.

What are the risks to veterinarians, farmers, and animal health professionals?
Infection with *Brucella abortus* in humans produces a condition called undulant fever. Symptoms include a high fever, headache, and weakness and can be treated with tetracycline antibiotics. Women affected by *Brucella* while pregnant can abort and men can present with epididymitis. Direct contact with aborted fetuses, affected calves, and reproductive tissue, as well as accidental inoculation with the vaccine, can result in infection.

Is there prophylactic treatment after exposure?
While efficacy has not been demonstrated in clinical trials, it is recommended that people inadvertently inoculated with Strain 19 or Rev-1 animal vaccines be given doxycycline 100mg twice daily, combined with rifampin 600-900mg once daily for 21 days; for conjunctiva inoculations, prophylaxis should be maintained for 4 - 6 weeks. Prophylaxis for exposure to RB51 vaccine strain would exclude rifampin because the organism was developed in rifampin media and is resistant in vitro. Any suspected accidental or purposeful exposure to animals or humans should be reported immediately to the local public health agency and the Iowa Department of Public Health at (800) 362-2736.